

CLAIMS

WHAT IS CLAIMED IS:

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1. A refrigeration apparatus comprising; a heat source-side unit having a compression mechanism and a heat source-side heat exchanger; a first utilization-side unit having a first utilization-side heat exchanger; a second utilization-side unit having a second utilization-side heat exchanger; a first liquid-side communication line and a first gas-side communication line which are for establishing connection between said heat source-side unit and said first utilization-side unit; and a second liquid-side communication line and a second gas-side communication line which are for establishing connection between said heat source-side unit and said second utilization-side unit, wherein:

15 said first liquid-side communication line is composed of a main flow pipe which is joined to a liquid pipe connected to said heat source-side heat exchanger, and a first branch pipe which branches off from said main flow pipe and is connected to said first utilization-side heat exchanger;

20 said second liquid-side communication line is composed of said main flow pipe, and a second branch pipe which branches off from said main flow pipe and is connected to said second utilization-side heat exchanger; and

25 a liquid seal mechanism is provided which is configured to maintain a side short of an expansion mechanism provided between said second utilization-side heat exchanger and said first utilization-side heat exchanger in a full liquid state in an operation mode during which refrigerant flows, in sequence, through said compression mechanism, said second gas-side communication line, said second utilization-side heat exchanger, said second branch pipe, said first branch pipe, said first utilization-side heat exchanger, and said first gas-side communication line.

2. The refrigeration apparatus of claim 1, wherein:

5 said liquid seal mechanism is formed by a backflow prevention mechanism which is provided either in said main flow pipe or said liquid pipe or in a line extending continuously therefrom so that the inflow of refrigerant into said main flow pipe and said liquid pipe from said second branch pipe is prevented.

3. The refrigeration apparatus of claim 2, wherein:

10 said heat source-side unit is provided with a receiver for storing refrigerant; and said receiver is connected to said liquid pipe through: a first inflow pipe which permits the inflow of refrigerant from said heat source-side heat exchanger; a first outflow pipe which permits the outflow of refrigerant to said liquid-side communication line; a second inflow pipe which permits the inflow of refrigerant from said liquid-side communication line; and a second outflow pipe which permits the outflow of refrigerant to 15 said heat source-side heat exchanger.

4. The refrigeration apparatus of claim 3, wherein:

said backflow prevention mechanism is provided in said second inflow pipe.

20 5. The refrigeration apparatus of claim 2, wherein:

said backflow prevention mechanism is formed by a relief valve operable to block a refrigerant flow path until the pressure of refrigerant acting on said backflow prevention mechanism exceeds a predetermined pressure level.

25 6. The refrigeration apparatus of claim 3, wherein:

said second inflow pipe is provided with a check valve which permits only one-way flow of refrigerant traveling from said liquid-side communication line towards said

receiver; and

5 said backflow prevention mechanism is provided with a backflow prevention pipe which introduces high pressure in a refrigerant circuit into said second inflow pipe so that said check valve is placed in the closed state, and an opening/closing valve for opening and closing said backflow prevention pipe.

7. The refrigeration apparatus of claim 6, wherein:

10 said backflow prevention pipe is configured such that high-pressure refrigerant is allowed to enter said second inflow pipe from a discharge pipe of said compression mechanism.

8. The refrigeration apparatus of claim 1, wherein:

15 said heat source-side unit is provided with a receiver for storing refrigerant; said receiver is connected to said liquid pipe through: a first inflow pipe which permits the inflow of refrigerant from said heat source-side heat exchanger; a first outflow pipe which permits the outflow of refrigerant to said liquid-side communication line; a second inflow pipe which permits the inflow of refrigerant from said liquid-side communication line; and a second outflow pipe which permits the outflow of refrigerant to said heat source-side heat exchanger;

20 said second inflow pipe is provided with a check valve which permits only one-way flow of refrigerant traveling from said liquid-side communication line towards said receiver; and

25 said liquid seal mechanism is provided with a high-pressure introduction pipe for introducing high pressure in a refrigerant circuit into said receiver, and an opening/closing valve for opening and closing said high-pressure introduction pipe.

9. The refrigeration apparatus of claim 8, wherein:

said high-pressure introduction pipe is configured such that high-pressure refrigerant is allowed to enter said receiver from a discharge pipe of said compression mechanism.

5 **10.** The refrigeration apparatus of claim 1, wherein:

 said heat source-side unit is provided with a receiver for storing refrigerant;

 said receiver is connected to said liquid pipe through: a first inflow pipe which permits the inflow of refrigerant from said heat source-side heat exchanger; a first outflow pipe which permits the outflow of refrigerant to said liquid-side communication line; a 10 second inflow pipe which permits the inflow of refrigerant from said liquid-side communication line; and a second outflow pipe which permits the outflow of refrigerant to said heat source-side heat exchanger;

 said second inflow pipe is provided with a check valve which permits only one-way flow of refrigerant traveling from said liquid-side communication line towards said 15 receiver; and

 said liquid seal mechanism is formed by a heating member for heating said receiver.

11. The refrigeration apparatus of claim 1, wherein:

20 said liquid seal mechanism is formed by an uprising part which is provided in said main flow pipe such that said uprising part extends upwards from said first branch pipe and said second branch pipe at a junction of said main flow pipe, said first branch pipe and, said second branch pipe.

25 **12.** The refrigeration apparatus of claim 1, wherein:

 said heat source-side heat exchanger is an outdoor heat exchanger which is installed outdoors;

said first utilization-side heat exchanger is a cold/freeze storage heat exchanger for providing refrigeration to the inside of a cold/freeze storage refrigerator compartment; and

 said second utilization-side heat exchanger is an air conditioning heat exchanger
5 for providing air conditioning to an indoor space.